Market liberalization and Prices

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Process of Liberalization of electricity market in North Macedonia (1/2)

- *2007: Customers connected to transmission grid provide 55% of their electricity needs on free market,*
- *2008: Consumers connected to transmission grid provide 100% of their electricity needs on free market,*
- *2012: TSO and DSO provide the quantities needed to cover losses in own network on the free market,*
- *2014: Consumers who meet the criteria (more than 50 employees and total annual income or total assets in excess of EUR 10 million) are obligatory part of the liberalized market,*
- *2016: small electricity consumers, with electricity consumption in 2015 over 1000 MWh have the right to provide their electricity needs on the free market,*
- *2017: small electricity consumers, with electricity consumption in 2016 over 500 MWh, have right to provide their electricity needs on the free market,*
- *2018: small electricity consumers, with electricity consumption in 2017 over 100 MWh, have right to provide their electricity needs on the free market,*
- *2019: Fully liberalization of electricity market.*

Process of Liberalization of electricity market in North Macedonia (2/2)

- *In order to protect small consumers and households from high electricity prices on the wholesale and price shocks, the new Energy Law provides protection for these categories of consumers by providing JSC ESM as the highest installed electricity generator in the Republic of North Macedonia, it is obliged to offer to the universal electricity supplier:*

  1) in 2019 at least 80% of the total annual needs of the supplier,

  2) in 2020 at least 75% of the total annual needs of the supplier,

  3) in 2021 at least 70% of the total annual needs of the supplier,

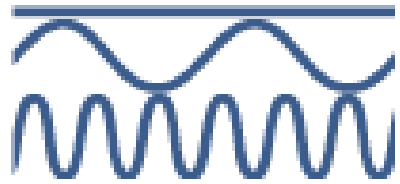
  4) in 2022 at least 60% of the total annual needs of the supplier,

  5) in 2023 at least 50% of the total annual needs of the supplier;

  6) in 2024 at least 40% of the total annual needs of the supplier;

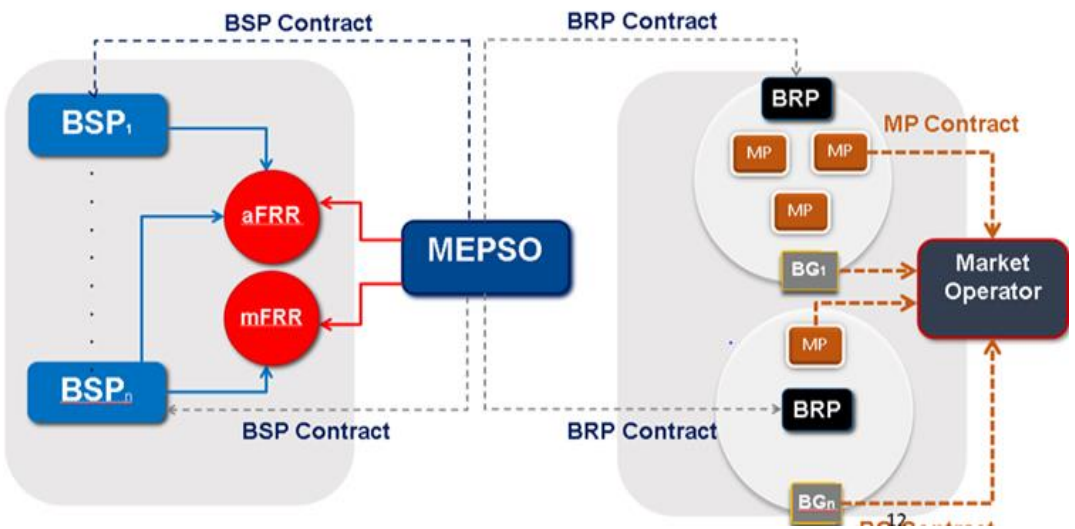
  7) in 2025 at least 30% of the total annual needs of the supplier.

Electricity Balancing Market (1/2)



- *Electricity law stipulates that all market participants have balancing responsibility.*
- *Balancing responsibility can be transferred to another market participant which is balancing responsible party (BRP).*
- *TSO is responsible for procuring balancing services from balancing service providers (BSP) in order to ensure operational security, is responsible for organizing and managing the balancing energy market.*
- *Rules for balancing the power system:*
  - *Applied from January 1, 2020, with prior approval by ERC, before regulated companies did not have balancing responsibility;*
  - *Define the role of balancing service providers and the role of balance responsible parties;*
  - *A transparent methodology is applied for determining the price for deviation from the nomination.*

Electricity Balancing Market (2/2)



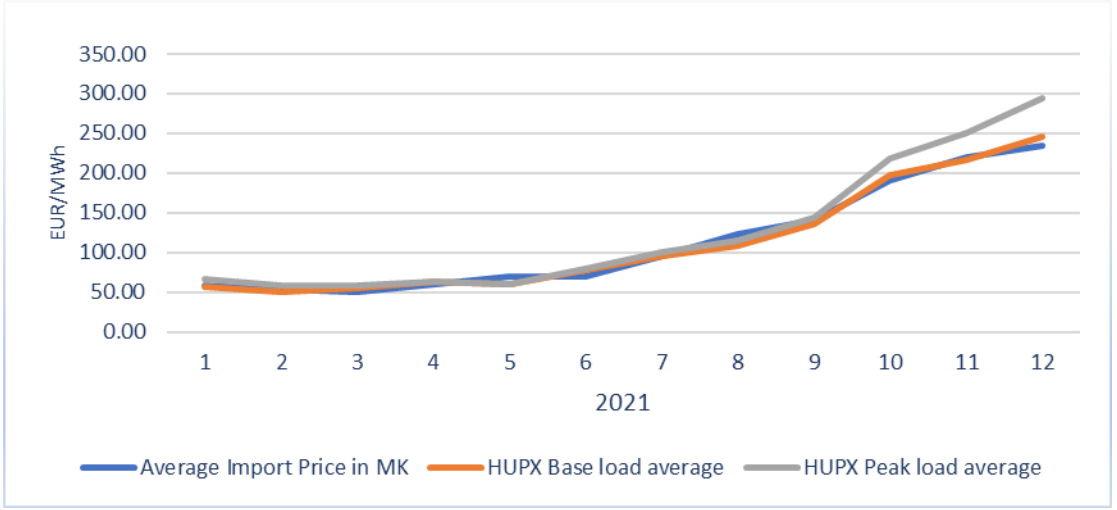
Year		aFRR+	aFRR-	mFRR+	mFRR-
2020	Needs (MW)	26,27	26,27	140	50
	Offered capacity (MW)	21,70	21,70	139,10	55,00
	Activated cpacity (MW)	18,45	17,91	109,59	42,39
	Prce for capacity (Eur/MW)	12,49	12,49	6,24	6,19
	Activated electricity (MWh)	8,97	8,51	37,14	27,53
	Price for activated electricity (Eur/MWh)	56,91	19,67	48,74	18,10
2021	Needs (MW)	26,23	26,23	140	50
	Offered capacity (MW)	14,80	14,80	132,50	66,30
	Activated cpacity (MW)	13,57	13,57	106,78	43,23
	Prce for capacity (Eur/MW)	12,49	12,49	6,24	6,16
	Activated electricity (MWh)	7,54	6,74	40,78	31,55
	Price for activated electricity (Eur/MWh)	160,06	43,16	103,95	48,74

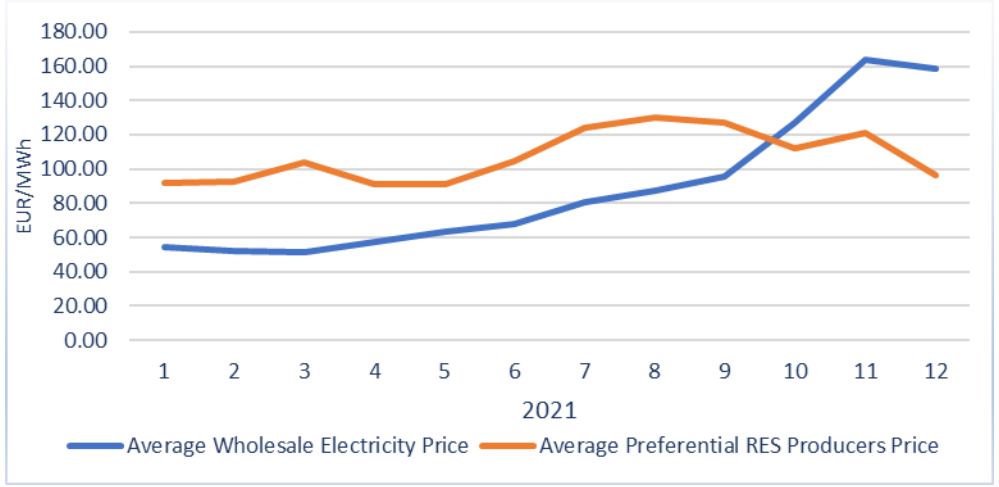
- *Overall costs for capacity and balancing energy in 2021 were 30,4 millions Euros for TSO while revenues were 2,7 millions Euros.*
- *Costs for ancillary services including balancing energy in 2021 increased by 52% in relation to the costs in 2020. This is mainly because of the high price for activated balancing energy.*
- *Costs for capacity decreased by 15%.*
- *There were 24 registered balancing groups.*
- *Negative imbalances were 551,59 MWh and BRPs paid approximately 92,8 million EUR.*
- *Average price for negative imbalances was 168 EUR/MWh.*
- *Positive imbalances were 338,46 MWh and NRPs gained approximately 29,7 million EUR.*
- *Average price for positive imbalances was 88 EUR/MWh.*
- *Balancing price was almost triple in 2021 compering to 2020.*

Key developments in electricity/power market

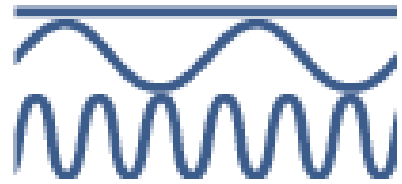
- *Energy price hikes dominated the period from September 2021 onwards;*
- *Government declared first Energy Crisis on Nov 9, 2021, and the Parliament extended its duration until June 9, 2022;*
- *Government declared second Energy Crisis on Aug 25, 2022, for the period Sept 1-30, 2022,and the Parliament extended its duration until April 30, 2023;*
- *Electricity VAT for households of 5% (it was reduced from 18 to 5% in July 2021) was introduced for the whole 2022. From January 2023 is raised to 10%;*
- *In order to keep the price increases for households and small consumers on a bearable level, the Government of North Macedonia financially supported state-owned ESM JSC Skopje for purchases of the needed electricity from the free market and additionally purchases of coal and fuel oil;*

Key developments in electricity/power market





Key developments in renewable energy/ energy transition/decarbonization



- *There is increased interest for investments in PV plants, mostly by industrial consumers (prosumers);*
- *In 2021 installed capacity of PV plants was increased by 14 MW and reached 45,3 MW;*
- *In 2022 there is additional 103,1 MW newly installed capacity in PV plants and reach 148,4 MW;*
- *There is ongoing process for amending/developing legal frame aimed to simplify investments in PV plants, both for households and industry;*
- *Due to these trends (other larger PV and Wind Power Plants investments are in pipeline) there is increased need for investments in system stability (TSO/DSO grids and base energy power plants – hydro and natural gas).*

Responsibilities of ERC

- *In accordance with the Energy law, ERC issues decisions for setting:*
  - *tariff for electricity transmission,*
  - *tariff for electricity distribution,*
  - *fee for electricity market operator,*

- *ERC is responsible for adoption of:*
  - *Rulebook on the manner and conditions for determining maximum allowed revenue and regulated average tariffs of electricity transmission, electricity market organization and management and electricity distribution,*
  - *Tariff system for electricity transmission and for electricity market operation,*
  - *Tariff system for electricity distribution,*
  - *Tariff system for supply of electricity for households and small consumers supplied by the universal supplier and for the supplier of last resort.*

Principles based in methodologies and tariffs

- *Methodologies and tariff systems shell provide:*
  - *balancing the interests of the entities performing energy services and the consumers;*
  - *protection of consumers and users of the system from any abuse of the dominant position on the market,*
  - *creating incentive measures for efficient operation of the entities performing energy services;*
  - *the entities performing energy services to reimburse the eligible costs, as well as to acquire an adequate return of capital;*
  - *financial assets necessary for investments that will ensure sustainable and secure functioning of energy systems;*
  - *elimination of cross-subsidies between consumer groups and overflow of revenues and expenses in performing regulated and/or nonregulated energy activities and*
  - *reimbursement of the costs of purchasing energy for covering the losses in the appropriate energy system, taking into consideration the plans and dynamics for reducing the losses that the system operators submit for approval to the ERC.*
- *ERC shall ensure that the electricity transmission and distribution tariffs are non-discriminatory, reflect the costs and consider the long-term capital costs and operating costs of the distributed producers and the consumption management measures.*

Block electricity tariffs (1/2)

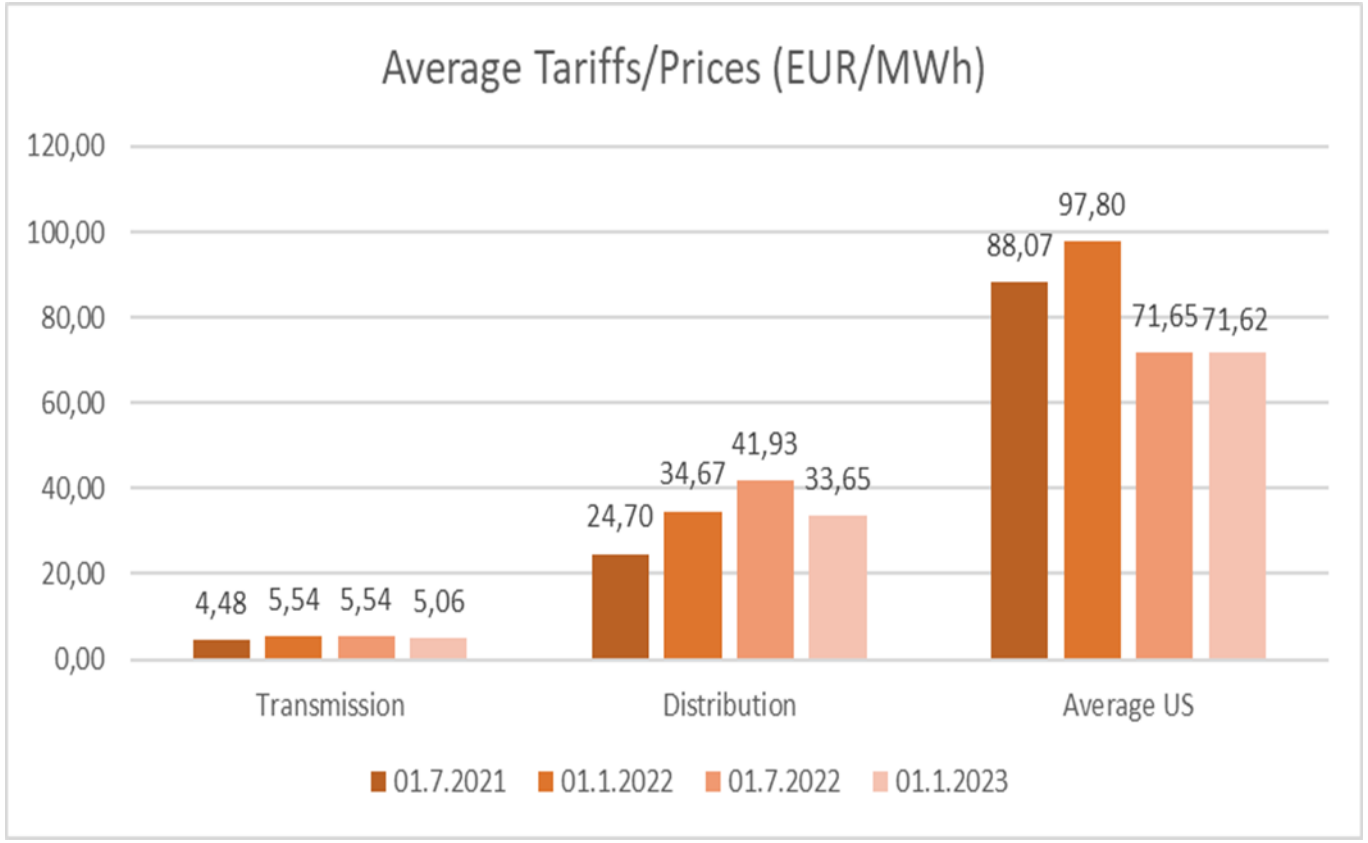
- *Tariff System on Electricity Sale to Consumers Supplied by the Universal Supplier and the Supplier in Last Resort, adopted by ERC on 27th of June 2022*
- *Until end of June 2022, all in tariff was applied to the consumers supplied by the universal supplier;*
- *With separating the electricity from the network charges, consumers can make comparison of the prices from different suppliers;*
- *The analysis of the consumption of households showed that some of the consumers drastically exceed the average consumption that is characteristic of this group of consumers.*
- *Having in mind that over 30% of the necessary electricity is imported, in order to protect consumers who, save electricity, and to the rest to send a signal to lower their electricity consumption, block tariffs were introduced with the new tariff system.*
- *Another issue was to shift consumption in the night period when TPPs technically can not lower the generation under some technical limits.*

Block electricity tariffs (2/2)

Block	Blocks (kWh)	2022 (MKD/kWh)	2022 (EUR/MWh)	2023 (MKD/kWh)	2023 (EUR/MWh)	23/22 % increase
HT1	210	4.3484	70.71	4.7257	76.84	8.68
HT2	211-630	4.7017	76.45	5.1578	83.87	9.70
HT3	631-1050	5.2877	85.98	6.0563	98.48	14.54
HT4	> 1050	14.1025	229.31	16.1336	262.33	14.40
LT	\	0.6193	10.07	1.3183	21.44	112.87

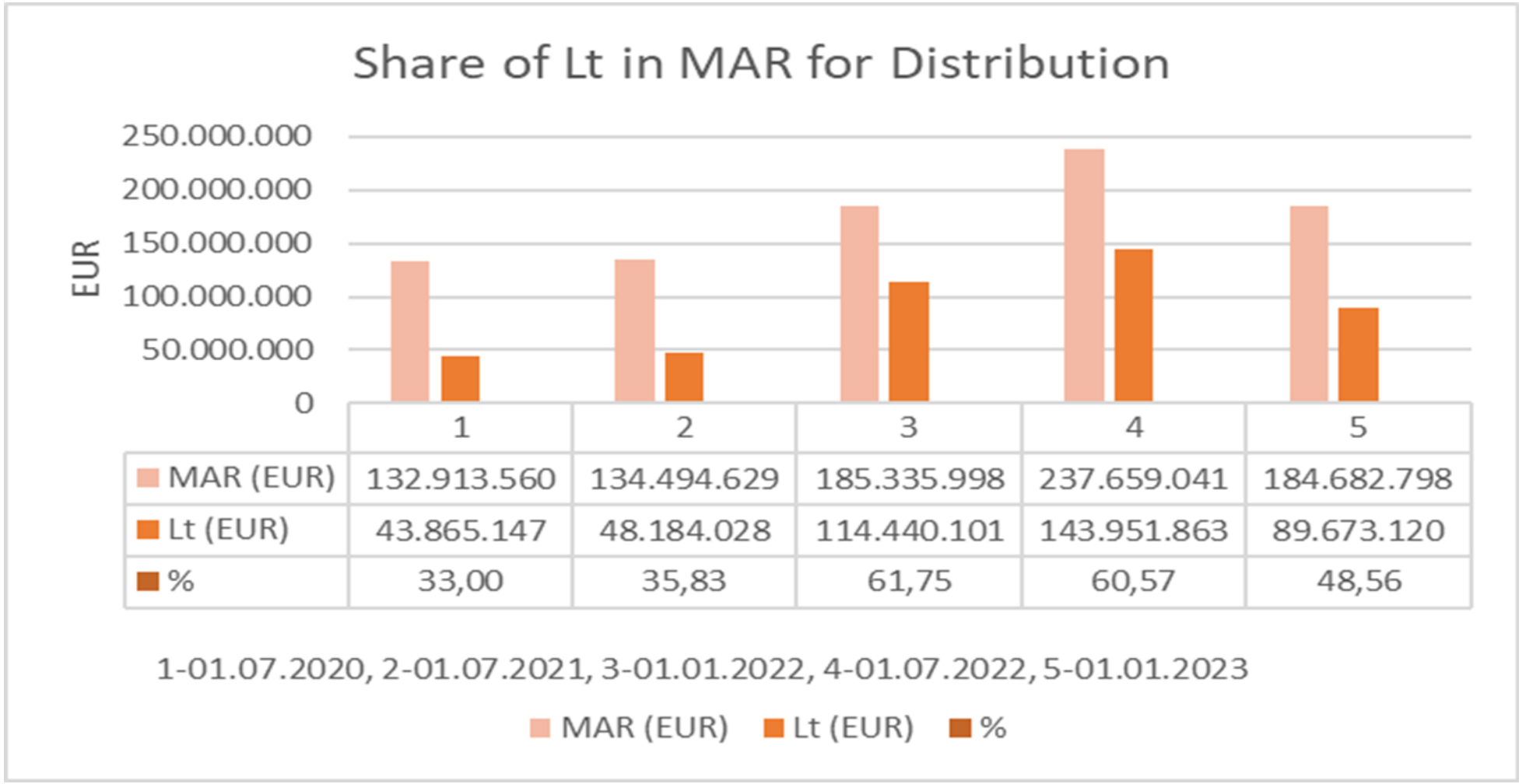
- *Block tariffs are applicable only in the period of high daily loads (07:00 – 22:00)*
- *For the rest of the daily period is applicable only one tariff which is substantially lower than the block tariffs.*
- *Initial analyzes for the period July - December 2022 show a decrease in electricity consumption by 16% compared to the same period in 2021*

Average Tariffs/Prices, period July 2021 – January 2023



	Jan 22/July 21	July 22/Jan 22	Jan 23/July 22
Transmission	23,78	-0,06	-8,63
Distribution	40,37	20,94	-19,75
Average US	11,04	-26,74	-0,04

Share of Cost for Electricity Distribution Losses in MAR



	1	2	3	4	5
MAR (EUR)	132.913.560	134.494.629	185.335.998	237.659.041	184.682.798
Lt (EUR)	43.865.147	48.184.028	114.440.101	143.951.863	89.673.120
%	33,00	35,83	61,75	60,57	48,56

THANK YOU FOR YOUR ATTENTION!

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